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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/511,347	10/15/2004	Lennart Borjesson	HPX0061	4054
27510	7590	11/02/2005	EXAMINER	
KILPATRICK STOCKTON LLP 607 14TH STREET, N.W. WASHINGTON, DC 20005			NGUYEN, JIMMY T	
			ART UNIT	PAPER NUMBER
			3725	

DATE MAILED: 11/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/511,347	Applicant(s) BORJESSON ET AL. <span style="float: right;">C</span>	
	Examiner Jimmy T. Nguyen	Art Unit 3725	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 29 April 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 14-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 14-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 October 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>10/15/04</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 14-27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 14, line 2, it is unclear whether the limitation: "which screw compressor" is the same screw compressor as claimed in line 1. Clarification is required. If they are the same element, it is suggested that the word "which" be changed to --- the ---.

Regarding claim 14, line 3, there is no antecedent basis for "the pitch" in the claim.

Regarding claim 14, line 3, it is unclear what does the term "which" refers to. Clarification is required.

Regarding claim 14, lines 3-4, there is no antecedent basis for "the longitudinal direction" in the claim.

Regarding claim 14, line 5, it is unclear whether the limitation: "which casing" is the same casing as claimed in the beginning of line 5. Clarification is required.

Regarding claim 14, lines 7-8, the limitation "where the pitch of the screw thread is greater ... where the pitch of the screw thread is smaller" is unclear and confusing. It is unclear how the same pitch of the screw thread can be greater and smaller at two separate ends.

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Regarding claim 14, line 17, the limitation “the matter that passes the screw compressor” is unclear. It is suggested that this limitation should be changed to --- the matter that passes through the screw compressor (emphasis added) ---.

Regarding claim 15, line 1, there is no antecedent basis for “the degree of compression” in the claim.

Regarding claim 17, line 3, it is unclear what is meant by “20% of the of the length”. It is suggested that one of the words “of the” should be deleted.

Regarding claim 20, line 2, it is unclear whether “ a water tight casing” is the same water-tight casing as claimed in claim 19, line 2. Clarification is required.

Regarding claim 22, lines 1-2, it is unclear whether the limitation: “which method” is the same method for compressing and washing matter as claimed in line 1. Clarification is required. If they are the same method, it is suggested that the word “which” be changed to --- the ---.

Regarding claim 22, line 4, there is no antecedent basis for “the pitch” in the claim.

Regarding claim 22, line 4, it is unclear what does the term “which” refers to. Clarification is required.

Regarding claim 22, line 4, there is no antecedent basis for “the longitudinal direction” in the claim.

Regarding claim 22, lines 7-8, the limitation “where the pitch of the screw thread is greater ... where the pitch of the screw thread is smaller” is unclear and confusing. It is unclear how the same pitch of the screw thread can be greater and smaller at two separate ends.

Regarding claim 22, step (f), line 1, there is no antecedent basis for “the dewatered matter” in the claim.

Regarding claim 22, step (h), line 1, the limitation “the washing agent that is supplied to the wet matter” is confusing because in step (f), the washing agent is being claimed as supplying to the dewatered matter, not the wet matter. Clarification is required.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**Claims 14-17 and 19-20, as best understood, are rejected under 35 U.S.C. 102(b) as being anticipated by McDonald (US 2,355,091).**

Regarding claim 14, McDonald discloses a screw compressor for compressing and separating liquid from matter that passes through the screw compressor, the screw compressor comprises: a screw (16) having an outer threading (fig. 1), a plurality of pitches of the outer threading which decreases in a longitudinal direction of the screw (fig. 1); a casing (fig. 2) that encases the screw, the casing has an inner side that faces the thread on the screw so that matter can be fed forward through the screw compressor between the screw and the inner side of the casing in a direction from an inlet end (12) of the screw compressor where a pitch of the screw thread is greater (fig. 1), to an outlet end (see the right section of fig. 1) of the screw compressor where a pitch of the screw thread is smaller (fig. 1); appliances (29) on the inner side of the casing, that are arranged to prevent matter that passes through the screw compressor from rotating along with the screw (see page 4, right column, lines 26-32); a conduit (38) for liquid

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supply arranged inside the screw and provided with a mouth (42) on the outside of the screw (see fig. 1) so that liquid can be fed through the screw and be supplied to matter that passes through the screw compressor, the mouth being arranged on the outer surface of the screw in order thereby to rotate along with the screw so that liquid that is supplied via the conduit is uniformly supplied to the matter that passes the screw compressor (fig. 1); McDonald discloses the screw compressor is arranged to press the liquid that is supplied to the matter via the mouth of the conduit axially backwards (47) in the longitudinal direction of the screw and towards the inlet end of the screw compressor.

Regarding claim 15, McDonald discloses the thread of the screw is uniformly facing the inner side of the casing from the inlet end to the outlet end of the screw compressor (fig. 1); therefore, a degree of compression in the screw compressor is constant from the inlet end to the outlet end.

Regarding claim 16, the mouth is arranged closer to the outlet end of the screw compressor than to its inlet end (fig. 1), so that liquid can be supplied to the matter that passes through the screw compressor when the matter has been exposed to compression over more than half the length of the screw compressor.

Regarding claim 17, the mouth is arranged close to the outlet end of the screw compressor, so that the distance from the mouth to the end of the thread is at most 20% of the length of the screw (fig. 1).

Regarding claim 19, the casing of the screw compressor is, at least over a part of its length, a water-tight casing that is at least essentially impervious to liquid (see the casing section where the sections (A) and (B) of the casing are jointed together (fig. 1)).

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Regarding claim 20, the casing of the screw compressor is, at least over a part of its length, a water-tight casing that is impervious to liquid (see the casing section where the sections (A) and (B) of the casing are jointed together (fig. 1)).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

#### **Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over McDonald.**

As to the distance from the mouth to the end of the thread is at most 10% of the length of the screw, McDonald discloses the distance from the mouth to the end of the thread is at most 10% of the length of the screw. However, it is not inventive to discover the optimum or workable ranges by routine experimentation when general conditions are disclosed in the prior art. *In re Aller*, 220F, 2d454, 105 USPQ 233(CCPA 1955). McDonald does however set forth the general distance of the mouth from to the end of the thread is at most 20% of the length of the screw, and thus it would have been obvious to one having ordinary skill in the art the time the invention was made to discover the optimum or workable ranges for the location of the mouth on the length of the screw in order to achieve the desired compression of the matter throughout the length of the screw compressor before the matter is being washed by the treating fluid from the mouth. Additionally, the specification does not disclose the any advantage for having a distance from the mouth to the end of the thread is at most 10% of the length of the screw.

**Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over McDonald, in view of Bussells (US 808,193).** McDonald discloses the invention substantially as claimed as set forth above except for the screw and the inner side of the casing are conically tapered towards the outlet end of the screw compressor. McDonald discloses the screw is conically tapered towards the inlet end of the screw compressor. However, the patent to Bussells teaches a screw compressor having a screw (fig. 1) and an inner side of a casing (B) are conically tapered towards an outlet end of the screw compressor (fig. 1) in order to improve the compression of the material to be treated in the screw compressor (page 1, lines 1-84). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide McDonald with a screw and an inner side of a casing conically tapered towards an outlet end of the screw compressor, as taught by Bussells, in order to improve the compression of the material to be treated in the screw compressor.

***Allowable Subject Matter***

Claim 22 is allowable because none of the references discloses or fairly suggests, the washing agent that is supplied to the dewatered matter is pressed axially backwards through the screw compressor toward the inlet end of the screw compressor, in combination with the rest of the claimed limitation.

US793,267; US808,193; US1,382,056; US2,355,091; and US4,838,995 disclose various screw compressors, each having a conduit arranged inside a rotating screw. Each of these compressors having a casing comprises perforated holes or gaps; therefore, liquid that is supplied



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to the dewatered matter would escaped through the holes/gaps and can not be pressed axially backwards through the screw compressor toward the inlet end of the screw compressor. Thus claim 22 contains allowable subject matter over the art of record.

Neither the prior art of record alone nor in combination thereof discloses the claimed invention as set forth in claim 22. Therefore, claim 22 and its dependents would be allowable if rewritten encompass the same scope and overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

### *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jimmy T. Nguyen whose telephone number is (571) 272-4520. The examiner can normally be reached on Mon-Thur 8:00am - 6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Derris Banks can be reached on (571) 272- 4419. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

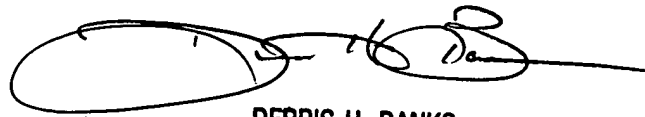
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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JTNguyen  
October 27, 2005

A handwritten signature in black ink, appearing to read "Derris H. Banks", with a large, stylized loop on the left and a horizontal line extending to the right.

**DERRIS H. BANKS**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 3700**